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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,333	09/08/2003	Daiji Kitagawa	83993-000002/US	9215

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HARNESS, DICKEY & PIERCE, P.L.C.
P.O. BOX 8910
RESTON, VA 20195

EXAMINER

LIANG, REGINA

ART UNIT	PAPER NUMBER
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2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS.	12/22/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/656,333

Applicant(s)

KITAGAWA ET AL.

Examiner

Regina Liang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-9, 11 and 13-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 9 and 11 is/are rejected.
- 7) ☒ Claim(s) 5-8, 13-20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is responsive to amendment filed 10/17/06. Claims 1-3, 5-9, 11, 13-20 are pending in the application.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

3. Claims 1-3 and 9, 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Kudo (US Patent No. 6,753,880)

As to claims 1, 9, 11, Kudo discloses a display device which includes a display portion having a capacitive load (see element 121 of Fig. 12) and an output buffer (502, Figs. 5 and 6) having a driving capability that depends on a bias current (col. 9, lines 61-62), and which displays an image on the display portion by letting the output buffer apply an analog voltage (V0 to V63, Fig. 5) corresponding to an input image signal (115, Fig. 5) to the capacitive load to drive the display portion (121, Fig. 12), the display device comprising: a bias current control portion (SW1-SW8, Fig. 6, also see col. 9, line 49 to col. 10, line 3) that controls the bias current; wherein the output buffer (502) is configured such that the bias current can be dynamically changed (col. 9, lines 61-62); and wherein the bias current control portion changes the bias current while the display portion is driven (col. 10, lines 52-56). Kudo also discloses the bias current control portion changes the bias current during a charge period or a discharge period, which is a period during which the output buffer is to apply the analog voltage to the capacitive

load (see col. 16, line 35 to col. 17, line 9).

As to claim 2, Kudo discloses the output buffer (502, Fig. 6) comprises: a plurality of transistors (MP5-MP8, MN4-MN7, Fig. 6), connected in parallel, for outputting the analog voltage (V_{out}); and a switching circuit (SW1-SW8, Fig. 6) for switching at least one of the plurality of transistors between an operative state and an inoperative state; wherein the bias current control portion (SW1-SW8, Fig. 6) changes the bias current by changing the number of said plurality of transistors that are in the operative state with the switching circuit (see col. 9, lines 25 to col. 10, line 3).

As to claim 3, Kudo discloses the output buffer comprises: a transistor for outputting the analog voltage; and an operating point changing circuit for changing an operating point of the transistor (e.g. on or off of the transistor); wherein the bias current control portion changes the bias current by changing the operation point of the transistor with the operating point changing circuit (see col. 9, lines 25 to col. 10, line 3).

Allowable Subject Matter

4. Claims 5-8 and 13-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter:

None of the prior art references, alone or in combination, fairly suggests or discloses the limitation of “the bias current control portion controls the bias current such that, after a predetermined time within the charge period or the discharge period, the bias current is smaller

than at the beginning of the charge period or the discharge period” as recited in claims 5 and 13.

None of the prior art references, alone or in combination, fairly suggests or discloses the limitation of “the bias current control portion determines, based on the input image signal, a time within the charge period or the discharge period at which the bias current is to be reduced, and controls the bias current such that, after that determined time, the bias current is smaller than at the beginning of the charge period or the discharge period” as recited in claims 6 and 14.

None of the prior art references, alone or in combination, fairly suggests or discloses the limitation of “the bias current control portion determines, based on a charge/discharge current flowing between the output buffer and the capacitive load, a time within the charge period or the discharge period at which the bias current is to be reduced, and controls the bias current such that, after that determined time, the bias current is smaller than at the beginning of the charge period or the discharge period” as recited in claims 7 and 15.

Response to Arguments

6. Applicant's arguments filed 10/17/06 have been fully considered but they are not persuasive.

Applicant's remarks on pages 7-9 regarding Kudo does not teach “the bias current is changed during a charge period or a discharge period, which is a period during which the output buffer is to apply the analog voltage to the capacitive load” because example embodiments of the present invention are not predicated on the existence of the above-mentioned stable period in the driving period, and the driving method of Kudo, which is predicated on existence of the stable period, cannot be applied. These arguments are not persuasive. Kudo states “it is supposed that

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the buffer circuit 502 has a steady-state current quantity of 10 μ A when the histogram data is "0h". When the histogram data is "5h", therefor, the steady-state current quantity becomes 90 μ A in charging and discharging period., a required current is output during only the charging and discharging period" (col. 16, line 35 to col. 17, line 9), which reads on "the bias current is changed during a charge period or a discharge period, which is a period during which the output buffer is to apply the analog voltage to the capacitive load" as claimed. The claims do not preclude the driving method having a stable period. Therefore, the rejections stand.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

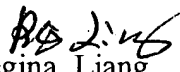
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Regina Liang whose telephone number is (571) 272-7693. The examiner can normally be reached on Monday-Friday from 8AM to 5:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on (571) 272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Regina Liang
Primary Examiner
Art Unit 2674

12/20/06